Climate Change, Inequality and Uneven Development in Africa by Etta-Nyoh Yvan Ayuk (Ph.D.) & Elangwe Gideon Eyakwe

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ABSTRACT

This paper titled climate change, inequality and uneven development in Africa sets out to investigate the relationship between climate change, inequality and uneven development in Africa. Africa stands at the frontline of climate change despite being one of the lowest contributors to global greenhouse gas emissions. The continent is experiencing a surge in climate-related disasters like droughts, floods, heatwaves, desertification, and rising sea levels which are directly affecting agricultural productivity, human health, migration patterns, and general well-being. However, these impacts are not felt equally. The paper contends that climate change in Africa not only exposes environmental vulnerability but also exacerbates existing socio-economic inequalities and contributes to the continent's uneven development. Using case studies from regions such as the Sahel, the Horn of Africa, and Southern Africa, this study shows how marginalized populations especially rural communities, women, and youth are disproportionately affected by climate-related shocks. A mixed-method approach is employed, drawing from climate vulnerability indices, socio-economic data, and field studies to illustrate how development disparities are being widened by ecological disruptions. The study adopts the lenses of climate justice, dependency theory, and sustainable development to examine the structure and consequence of inequality in the face of climate change. The findings suggest that African governments, in collaboration with regional and global partners, must address this crisis through strategic policy interventions that combine climate adaptation, equitable resource allocation, and inclusive development planning. Recommendations include investing in climate-resilient infrastructure, ensuring access to clean energy, and advocating for fair international climate financing mechanisms. Ultimately, this article highlights that without environmental justice and equality, sustainable development in Africa will remain elusive.

Key Words: Climate Change; Inequality; Uneven Development; Resilience; Africa

INTRODUCTION

Climate change is no longer a distant or abstract phenomenon; it is an everyday reality that is reshaping livelihoods, economies, and ecosystems particularly in Africa. Despite contributing less than 4% of global greenhouse gas emissions (UNEP, 2023), Africa faces some of the most severe consequences of climate change. Rising temperatures, shifting rainfall patterns, desertification, sea level rise, and increased frequency of extreme weather events like floods and droughts are now commonplace across the continent. While climate change affects the entire world, it does not do so equally. In Africa, its impacts are complexified by deep-rooted social and economic inequalities. Urban elites with access to cooling systems, clean water, and reliable infrastructure are better protected from climate shocks than rural populations who depend directly on the environment for survival. Similarly, countries with higher GDPs and stronger institutions are better able to plan and implement climate adaptation strategies than those burdened with debt, weak governance, and poverty. This intersection of environmental risk and socio-economic disparity has given rise to what scholars and policymakers describe as a "climate inequality trap" a cycle in which climate change exacerbates existing vulnerabilities, thereby slowing or reversing development gains (Barrett et al., 2022). This is particularly evident in Sub-Saharan Africa, where over 60% of the population depends on rain-fed agriculture (FAO, 2021), yet faces rapidly declining rainfall and unpredictable growing seasons. Moreover, the consequences of climate change are not only economic; they are also political and cultural. Climate-related displacement is increasing, forcing people to migrate from rural to urban areas, or across borders, putting pressure on already

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fragile infrastructure and governance systems. This has led to growing social tensions, resource conflicts, and political instability in several African countries and geostrategic zones including the Lake Chad and Congo Basins, Somalia, and Sudan. At the continental scale, development remains uneven. Countries like South Africa, Morocco, and Kenya are moving ahead with green energy investments and climate-smart agriculture, while others, such as Chad, the Democratic Republic of Congo, and Burkina Faso, struggle with basic environmental governance due to conflict, poverty, or institutional weaknesses. This developmental disparity further widens inequality, creating a two-tiered system of adaptation and resilience across the continent.

This article seeks to examine how climate change acts not only as an environmental issue but also as a magnifier of inequality and a driver of uneven development in Africa. It explores the theoretical linkages among climate change, social inequality, and development, while grounding the analysis in both qualitative insights and quantitative data. The aim is to provide a clear and balanced understanding of how climate change interacts with socio-economic systems in Africa and to make suggestions as to what can be done to mitigate its most damaging effects.

To achieve this aim, the study is guided by the following problematique: How does climate change disproportionately affect different groups and regions in Africa? Specifically, the problematique is articulated in the following questions:

In what ways does climate change deepen existing social and economic inequalities in Africa?

What are the implications of climate change for sustainable development in Africa?

What policy frameworks or strategies can African countries adopt to break this cycle?

Theoretical Considerations

As tools for analyzing and understanding the complex relationship between climate change, inequality, and uneven development in Africa, this article draws from three interconnected theoretical lenses: Dependency Theory, Climate Justice Theory, and Sustainable Development Theory. These frameworks help contextualize why Africa is disproportionately affected, why development remains fragmented, and what structural dynamics prevent effective adaptation.

Dependency Theory

The Dependency Theory originates from post-colonial economic thought and argues that developing countries especially in Africa have been structurally disadvantaged by their historical relationship with the global capitalist system (Rodney, 1972; Frank, 1967). This theory asserts that African nations continue to rely on wealthier countries for trade, technology, aid, and investment, while exporting raw materials under unequal terms.

In the context of climate change, the dependency theory explains why African countries:

Have limited control over global emissions policy;

Rely on foreign aid for adaptation and mitigation efforts;

Lack technological autonomy in energy transitions.

For example, while the EU and the United States develop electric vehicles and transition to renewable energy, African nations often import second-hand technologies, remain tied to fossil fuel exports, and depend on Western-dominated climate finance institutions (Bond, 2012). Thus, dependency theory demonstrates that Africa's vulnerability to climate change is not just environmental, as it is rooted in structural inequalities in the global economic order.

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Climate Justice Theory

The Climate Justice Theory on its part emphasizes the ethical and political dimensions of climate change. It seeks to answer: Who is responsible? Who suffers? And who should pay?

The theory holds that climate change is not just an environmental crisis, but a human rights and equity crisis. According to Roberts and Parks (2007), industrialized countries have historically emitted the vast majority of greenhouse gases, yet poorer countries in the Global South bear the brunt of the consequences. This injustice is even more pronounced within countries, where the rich can insulate themselves from environmental shocks while the poor face them directly.

In Africa, climate justice theory helps explain:

Why rural farmers in Niger are more vulnerable than business elites in Lagos.

Why coastal fishing communities in Mozambique suffer more from cyclones than tourism investors with insurance.

Why women and children in climate-affected zones face higher mortality and migration pressures (UN Women, 2020).

Climate justice advocates for:

A rights-based approach to climate adaptation,

International mechanisms for climate reparations, and

Inclusive policies that empower vulnerable populations in decision-making processes.

Sustainable Development Theory

Popularized by the Brundtland Commission Report in 1987, the sustainable development framework promotes the idea of meeting "the needs of the present without compromising the ability of future generations to meet their own needs." The theory is particularly useful for analyzing uneven development in Africa in the face of climate change. While some African nations prioritize short-term economic growth (for example, expanding mining or oil extraction), others are investing in long-term resilience such as renewable energy, eco-agriculture, and conservation.

The Sustainable Development theory helps frame:

The trade-offs between development and environmental conservation.

The importance of policy coherence aligning national development plans with climate adaptation goals.

The need for regional coordination, since climate effects do not stop at borders.

For instance, Ethiopia's Green Legacy Initiative aims to plant billions of trees to combat land degradation and boost resilience. Meanwhile, Nigeria's dependence on oil extraction has left many delta communities exposed to both environmental degradation and climate risks, contributing to persistent underdevelopment.

These three theories; Dependency, Climate Justice, and Sustainability are not mutually exclusive. In fact, they work together to explain why:

Africa remains vulnerable despite decades of "development assistance,"

The global climate response remains skewed toward powerful nations,

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Internal inequality limits the ability of African governments to adapt equitably.

Together, these theoretical builds help guide the analysis in the next sections of this paper, especially the Methodology, Findings, and Discussions, where data and real-life examples are interpreted through these theoretical considerations.

METHODOLOGY

This section outlines the research approach used to investigate the relationship between climate change, inequality, and uneven development in Africa. A mixed-methods research approach was adopted, combining both qualitative and quantitative data to provide a well-rounded understanding of the issues under consideration.

Given the complexity of the topic, a descriptive research design was employed. This allowed for the interpretation of patterns, relationships, and trends across different African regions. Data analysis and interpretation was done using the thematic content interpretation of development indicators.

Quantitative data was sourced from internationally recognized institutions such as:

The World Bank (2022–2023) for income inequality and development indices.

The UNDP Human Development Reports for HDI rankings.

The Notre Dame Global Adaptation Initiative (ND-GAIN Index) for climate vulnerability and readiness scores.

The Global Carbon Atlas for emission statistics.

Qualitative data was collected from Scholarly articles, Policy documents from African governments, NGO and UN agency reports (such as UNEP, IPCC), Climate justice advocacy reports. The study did not rely on field interviews but instead focused on the purposive sampling of African countries and regions that demonstrate significant variations in climate impact and development.

Countries analyzed included:

Highly vulnerable and low-income: Chad, Niger, Mozambique.

Middle-income with resilience efforts: Kenya, Ghana, South Africa.

Resource-rich but environmentally fragile: Nigeria, Angola, DR Congo.

Variables Used in Analysis

The following variables were used to draw correlations between climate change, inequality, and development:

Table 1: Variables used in the study

Variable	Measurement Tool	Purpose in Study
Climate Vulnerability	ND-GAIN Index	Measures exposure and sensitivity to climate
Income Inequality	Gini Coefficient (World Bank)	Assesses distribution of wealth
Human Development	HDI (UNDP)	Gauges access to health, education, and income

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Greenhouse Gas Emissions	Global Carbon Atlas	Compares national carbon footprints
Climate Readiness	ND-GAIN Readiness Index	Evaluates capacity to adapt to climate impacts
Rural Livelihood Dependence	FAO Reports	Shows exposure through agriculture
Development Finance Received	OECD and AfDB Data	Measures external support for climate action

Source: Authors' conception, 2025

The study made use of several analytical tools and techniques including: Cross-tabulation to relate climate vulnerability and inequality across countries; Bar charts and pie graphs to visualize disparities; Thematic grouping for qualitative findings, such as recurring adaptation barriers; Comparative analysis of national climate policies and their social impacts.

Limitations of the Methodology

While secondary data is useful for comparative regional analysis, it may not reflect current realities on the ground, especially in conflict-affected zones where data collection is poor. Additionally, the absence of primary interviews limits insight into personal experiences of inequality, but the inclusion of NGO reports and government statements helps to fill these gaps.

Table 2: Summary of Key Indicators and Sources Used

Indicator	Source	Year
Climate Vulnerability Index	ND-GAIN	2023
Human Development Index (HDI)	UNDP	2023
Gini Coefficient	World Bank	2022
Rural Population %	FAO	2022
Greenhouse Gas Emissions ($MtCO_2$)	Global Carbon Atlas	2022
Climate Adaptation Funds Received	OECD/Green Climate Fund	2023

Source: Authors' conception, 2025

This structured approach lays the groundwork for the Findings section, where real data from selected countries is presented in charts and tables to expose the relationships between environmental stress, inequality, and development gaps in Africa.

FINDINGS

Data Insights on Climate Change, Inequality, and Uneven Development in Africa

This section presents and interprets real-world data drawn from secondary sources to examine how climate change contributes to inequality and uneven development across African countries. The findings are organized into three broad categories:

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Climate Vulnerability vs. Economic Capacity

Unequal Climate Impacts Across Populations and Regions

Disparities in Climate Adaptation and Resilience

Each subsection includes charts, tables, or graphs to visualize key patterns.

Climate Vulnerability vs. Economic Capacity

Africa is home to some of the world's most climate-vulnerable countries. Yet many of these same countries have the lowest adaptive capacity, limited institutional readiness, and constrained public finance. This creates a dangerous mismatch between exposure and resilience.

Table 3: Top 10 Most Climate-Vulnerable Countries in Africa

Country	Vulnerability Score	Readiness Score	HDI Rank (UNDP 2023)
Chad	0.16	0.24	190/193
Central African Republic	0.18	0.25	188/193
Sudan	0.21	0.28	185/193
Niger	0.23	0.31	189/193
DR Congo	0.26	0.33	180/193
Mozambique	0.27	0.30	182/193
Mali	0.29	0.32	186/193
Burkina Faso	0.30	0.35	183/193
Ethiopia	0.33	0.39	175/193
Somalia	0.34	0.20	N/A

Source: ND-GAIN, 2023

These countries are not only ecologically exposed but also economically fragile and politically unstable, making it difficult for them to implement climate adaptation strategies. This contributes to development stagnation or decline.

Unequal Climate Impacts Across Populations and Regions

Climate change does not affect everyone equally. Populations in rural areas, informal settlements, and conflict-prone regions face the brunt of climate disasters, leading to increased migration, hunger, school dropouts, and income shocks.

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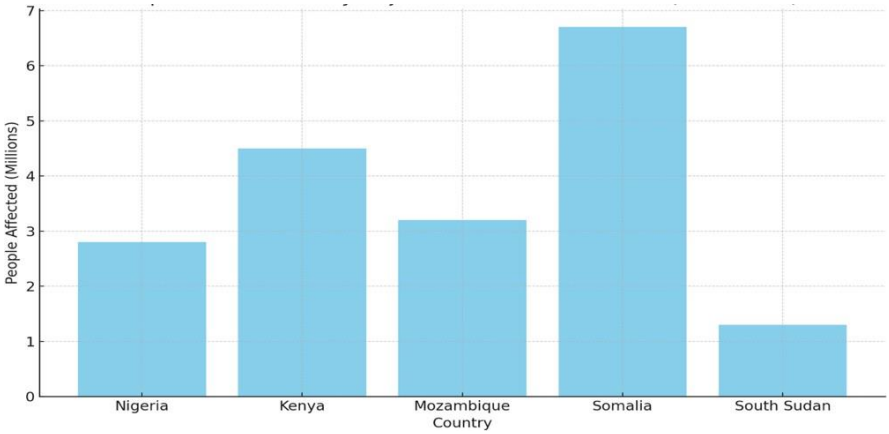

Fig 1: Populations Affected by Major Climate Events in Africa (2020–2023)

Source: Adapted from State and trends in adaptation report 2022

Country	Event Type	Estimated People Affected (Millions)
Nigeria	Floods	2.8 million
Kenya	Drought	4.5 million
Mozambique	Cyclones (Idai, Freddy)	3.2 million
Somalia	Drought/Famine	6.7 million
South Sudan	Floods	1.3 million

Table 4: Populations Affected by Major Climate Events in Africa (2020–2023)

Source: Adapted from State and trends in adaptation report 2022

In many of the cases in the demonstrations above, poor and rural populations lost access to food, shelter, water, and income. For example, in Somalia, repeated droughts between 2020 and 2023 led to widespread displacement, hunger, and child malnutrition (FAO, 2023).

Disparities in Climate Adaptation and Resilience

While some African countries are investing in clean energy, early-warning systems, and urban infrastructure upgrades, others lag far behind due to low revenue generation, poor governance, or conflict. This reflects the uneven development and advancement of climate resilience. Table 5 below illustrates the level of revenue allocation to climate adaptation in some African countries.

Table 5: Comparative Climate Adaptation Spending

Country	National Adaptation Budget	% of GDP	Key Focus Area
South Africa	$1,200 million	0.28%	Renewable energy, coastal defense
Kenya	$450 million	0.41%	Water systems, smart agriculture
Ghana	$320 million	0.35%	Climate-resilient infrastructure
Chad	$55 million	0.09%	Drought relief and food security
Niger	$60 million	0.10%	Community water access

Source: USD Million, 2023.

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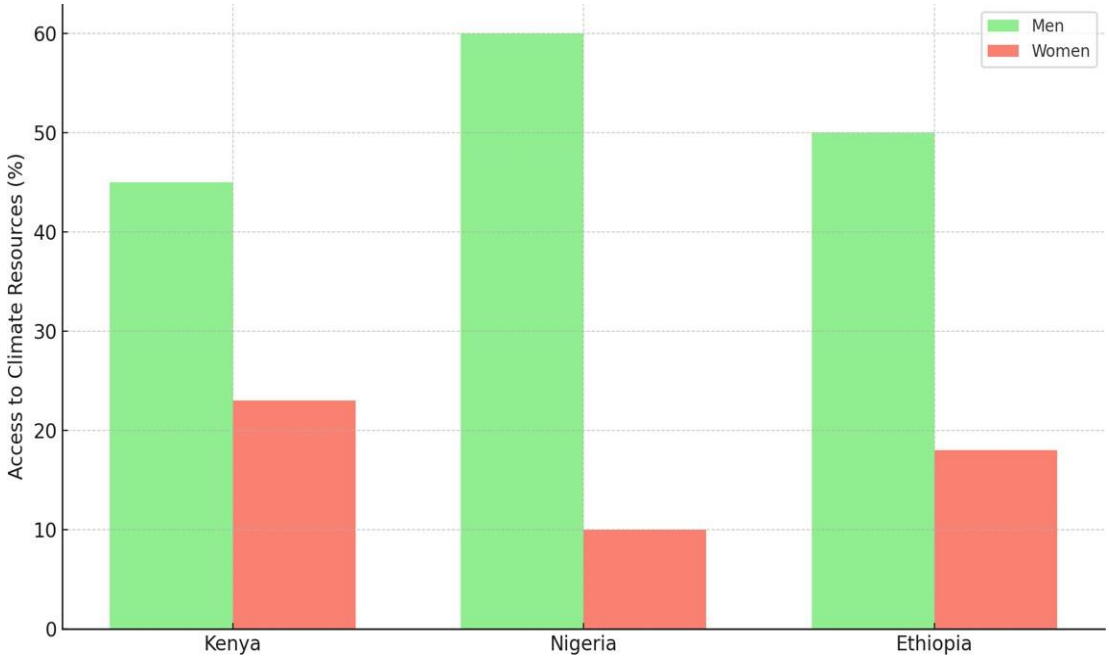
Wealthier or more politically stable countries can dedicate more funds to adaptation. However, even middle-income countries like Kenya still struggle to meet rising needs. Fragile states like Chad and Niger spend far less — often relying on donor funding or emergency response instead of long-term planning.

Youth, Gender, and Rural Disparities

Climate vulnerability is also shaped by demographics. Women and youth in Africa are disproportionately affected due to limited land rights, unequal access to education, and exclusion from climate decision-making.

Fig 2: Gender Access to Climate Resources (Selected Countries, 2022)



Source: Adapted from Gender equality in climate action – UNDP, 2025

Observation: In Kenya, only 23% of landowners are women, despite women producing 70% of food. In Nigeria, fewer than 10% of recipients of climate-smart agricultural training are female (UN Women, 2022).

DISCUSSIONS

This section critically examines the implications of the findings presented earlier and compares them with established literature. It explores why certain regions and populations are more affected by climate change, how this reinforces structural inequality, and what it means for the broader goal of sustainable development across the African continent.

Climate Vulnerability and Economic Injustice

As shown in the findings, the most climate-vulnerable countries in Africa such as Chad, Niger, and Mozambique are also some of the world's poorest, least industrialized, and most politically fragile. This mirrors what Roberts and Parks (2007) describe as "the double injustice" of climate change: nations and populations who contributed least to the problem are suffering the most, with the fewest resources to respond.

For instance, Somalia's repeated droughts and floods have resulted in the internal displacement of over 1 million people annually (FAO, 2023). Yet Somalia's per capita carbon emissions are among the lowest in the world. These disparities underscore the failure of global climate frameworks to address historical emissions or compensate for "loss and damage" suffered by countries with weak adaptive capacity.

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This finding aligns with the Climate Justice Theory, which demands a redistributive approach to climate financing - one that goes beyond mitigation and includes reparations, support for displaced persons, and access to technology for low-income nations.

Unequal Impacts Within Countries

Climate change does not only divide countries it divides communities within countries. As the gender-based access chart shows, women have significantly lower access to land ownership, irrigation systems, and climate finance mechanisms. This is not just a gender gap — it is a development trap, where structural exclusion from resources prevents women from building resilience, even though they form the backbone of rural food production (UN Women, 2022).

Similarly, the urban-rural divide is stark. In Nigeria, climate-induced floods primarily devastate low-income informal settlements with poor drainage and no insurance, while wealthier areas recover faster or avoid damage altogether. This reflects what Pelling and Wisner (2009) term "differential vulnerability," where wealth, geography, and social status determine the ability to prepare for, absorb, and recover from environmental shocks.

Uneven Development and Adaptive Capacity

One of the most striking insights from the findings is the vast gap in adaptation spending across African nations. South Africa, with its diversified economy and stronger institutions, can afford over $1 billion in annual climate adaptation. In contrast, Chad and Niger spend less than $60 million amounts insufficient even for short-term disaster response, let alone long-term climate planning.

This disparity feeds into a cycle of uneven development:

Poorer countries face more frequent and intense climate shocks.

They lack resources to invest in resilience.

Shocks lead to economic decline and displacement.

The weakened economy reduces future adaptive capacity.

This cycle is supported by Dependency Theory, which emphasizes how the global economic system traps poorer nations in reactive positions. Because African countries rely heavily on donor financing and imports for climate technologies, they remain vulnerable to both external shocks and internal stagnation (Bond, 2012).

Comparison with Other Studies

A comparison with studies from Asia and Latin America shows that while climate inequality is a global issue, it is most extreme in Africa due to the triple burden of:

High ecological exposure (such as Sahel desertification),

Limited infrastructure and human capital, and

Weak political and financial institutions.

According to the IPCC (2022), Africa will require at least $50 billion annually in adaptation funds by 2050, yet current international commitments fall far below that figure. In Latin America, countries like Brazil and Chile have higher access to domestic climate finance due to stronger financial markets — a luxury that most African countries do not have.

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The Role of Governance and Policy Gaps

Even where climate funds exist, weak governance undermines their effective use. Corruption, poor planning, and lack of local involvement often result in projects that fail to serve the most vulnerable. For instance, a World Bank-funded irrigation project in Mali was suspended after reports showed that land access was limited to elites and ex-government officials (World Bank, 2021).

This supports the argument that climate solutions must be inclusive, transparent, and community-led. A top-down technocratic approach will only widen the inequality gap and further marginalize already excluded groups.

RECOMMENDATIONS

Based on the analysis of the findings and discussions, this section outlines practical, policy-oriented, and community-driven recommendations to address the overlapping crises of climate change, inequality, and uneven development in Africa.

Strengthening Local Climate Adaptation Systems

Local adaptation should be the foundation of climate resilience in Africa. Most African communities affected by floods, droughts, and other climate stressors live in rural or peri-urban areas where national governments have limited presence. Decentralizing climate funds to empower local councils and municipalities to implement context-specific solutions is therefore recommended.

Reformation of Climate Financing Architecture

The current climate financing structure disadvantages African nations. Most funds are tied to complex procedures, loans instead of grants, and high co-financing requirements that poorer nations cannot meet. Pushing for climate loss and damage compensation at COP negotiations, especially for countries with the least emissions.

Strengthening Regional Climate Cooperation

Since climate change crosses borders, African countries need strong continental and sub-regional partnerships to manage shared ecosystems like the Sahel, Congo Basin, and Lake Chad.

Specifically:

Revive and fund regional climate initiatives under bodies like the African Union and ECOWAS.

Support cross-border water and forest management agreements.

Coordinate data sharing and joint response strategies for early warning and crisis relief.

For Example, The Great Green Wall Initiative, if fully implemented, could restore 100 million hectares of degraded land across 11 countries in the Sahel (UNCCD, 2022).

Promoting Climate Education and Youth Engagement

Youth make up over 60% of Africa's population and will live longest with the consequences of climate inaction. Yet, many are excluded from policy spaces and lack access to climate education. To capitalize on this youthful population, this study recommends:

Integrating climate science into school curricula across all levels of education.

Supporting youth-led innovation and advocacy through climate grants, hackathons, and leadership programs.

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Creating national youth climate councils to influence environmental policymaking.

In Senegal for example, youth-led groups are using drone technology for mangrove reforestation and are recognized in municipal development plans (UNDP, 2021).

Enhancing Transparency and Accountability in Climate Projects

Many climate adaptation projects in Africa fail not due to poor planning, but because of corruption, elite capture, and exclusion of target beneficiaries. To address these issues, this study recommends:

Implement social accountability tools like citizen scorecards and participatory budgeting.

Make climate spending reports public and easily accessible in local languages.

Empower watchdog NGOs and community monitors to track project implementation.

CONCLUSION

Climate change is not just an environmental crisis in Africa; it is a developmental emergency that exposes and exacerbates deeply rooted structural inequalities. This paper has examined how climate change intersects with socio-economic disparities to produce uneven patterns of development across the continent. The findings clearly show that while Africa contributes the least to global greenhouse gas emissions, it is among the most severely impacted — and those most affected are often the poorest, most marginalized, and least equipped to respond.

Through case studies and data from different regions, the evidence reveals a vicious cycle: climate change deepens inequality, and inequality in turn weakens the capacity of populations to adapt or recover from environmental shocks. Women, rural farmers, displaced persons, and youth are disproportionately affected, facing higher exposure to risks and lower access to resources like land, finance, and decision-making platforms.

The charts presented — on population affected by major climate events and gender disparities in access to climate resources — further highlight the extent of this imbalance. These visual representations demonstrate not only the scale of human suffering, but also the structural neglect in climate response systems. Moreover, the methodological analysis has shown that most national strategies remain top-down, donor-dependent, and urban-focused, failing to integrate local realities or equitable distribution mechanisms.

However, this crisis also presents a unique opportunity. By adopting a justice-based approach to climate governance — one that prioritizes vulnerable populations, invests in community resilience, reforms financing systems, and promotes inclusive development — African nations can transform this threat into a catalyst for sustainable growth. The recommendations outlined in this paper offer concrete steps forward, grounded in both local experience and global best practices.

For Africa to truly overcome the challenges posed by climate change, efforts must be systemic, sustained, and people-centered. It is not enough to build infrastructure; the continent must build equity. It is not enough to adapt to climate shocks; it must transform its socio-political and economic foundations. Only through such integrated, inclusive strategies can Africa achieve the vision of climate-resilient and just development for all its people.

REFERENCES

1. African Centre for Technology Studies. (2022). Climate-smart agriculture in East Africa: Equity and effectiveness. ACTS.
2. African Development Bank. (2022). African economic outlook 2022: Supporting climate resilience and a just energy transition in Africa. AfDB.
3. African Union Commission. (2021). Africa's green recovery action plan. African Union.

4. Barrett, S., Dellink, R., & Emmerling, J. (2022). Inequality and climate change: Evidence and policy implications. Environmental Research Letters, 17(3), 034013.
5. Bond, P. (2012). Politics of climate justice: Paralysis above, movement below. University of KwaZulu-Natal Press.
6. Carleton, T., & Hsiang, S. (2016). Social and economic impacts of climate. Science, 353(6304), aad9837.
7. Cramer, C., Sender, J., & Oqubay, A. (2020). African economic development: Evidence, theory, and policy. Oxford University Press.
8. Food and Agriculture Organization. (2021). The state of food and agriculture: Making agrifood systems more resilient to shocks and stresses. FAO.
9. Food and Agriculture Organization. (2023). Drought in the Horn of Africa: Humanitarian needs and responses. FAO.
10. Frank, A. G. (1967). Capitalism and underdevelopment in Latin America. Monthly Review Press.
11. Global Carbon Atlas. (2023). CO_2 emissions by country. https://www.globalcarbonatlas.org
12. Green Climate Fund. (2022). Annual results report 2022. GCF Secretariat.
13. Heinrich Böll Foundation. (2021). Climate finance for Africa: Justice and access. Heinrich Böll Stiftung.
14. Intergovernmental Panel on Climate Change. (2014). Fifth assessment report: Africa regional report. IPCC.
15. Intergovernmental Panel on Climate Change. (2022). Sixth assessment report: Impacts, adaptation and vulnerability. IPCC.
16. International Organization for Migration. (2022). Climate-induced migration in Africa: Policy gaps and challenges. IOM.
17. Leichenko, R. M., & Silva, J. A. (2014). Climate change and inequality: Social and economic impacts. Wiley Interdisciplinary Reviews: Climate Change, 5(4), 359–372.
18. ND-GAIN Index. (2023). University of Notre Dame Global Adaptation Initiative.
19. Oxfam International. (2022). Footing the bill: Fair finance for loss and damage in an era of climate crisis. Oxfam.
20. Pelling, M., & Wisner, B. (2009). Disaster risk reduction: Cases from urban Africa. Earthscan.
21. Roberts, J. T., & Parks, B. C. (2007). A climate of injustice: Global inequality, North-South politics, and climate policy. MIT Press.
22. Rodney, W. (1972). How Europe underdeveloped Africa. Bogle-L'Ouverture Publications.
23. Sachs, J. D. (2015). The age of sustainable development. Columbia University Press.
24. Satterthwaite, D. (2020). Urban inequality and climate change. Environment and Urbanization, 32(1), 3–18.
25. South Centre. (2021). Equity, climate justice and the global climate regime (Policy Brief No. 95). South Centre.
26. Tschakert, P., & Machado, M. (2012). Gender justice and rights in climate change adaptation. In Mearns, R., & Norton, A. (Eds.), Social dimensions of climate change (pp. 197–226). World Bank.
27. Ukeje, C., & Mvukiyehe, E. (2020). Youth, climate change, and conflict in the Sahel. West African Papers. OECD Publishing.
28. UN-Habitat. (2020). Climate change and urban inequality in Africa. UN-Habitat.
29. UN Women. (2020). Gender equality in climate action. UN Women.
30. UN Women. (2022). Climate change and gender inequality: Voices from rural Africa.
31. United Nations Convention to Combat Desertification. (2022). The Great Green Wall: Implementation status and way ahead to 2030. UNCCD.
32. United Nations Department of Economic and Social Affairs. (2019). World population prospects: Youth demographics in Africa. United Nations.
33. United Nations Development Programme. (2023). Human development report 2023: Breaking the cycle of inequality. UNDP.
34. United Nations Environment Programme. (2022). State of the climate in Africa 2022. UNEP.
35. United Nations Environment Programme. (2023). Adaptation gap report 2023. UNEP.
36. United States Agency for International Development. (2021). Resilient Africa Network: Community adaptation to climate risk. USAID.

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37. World Bank. (2021). Climate change and development: An economic framework. World Bank Group.
38. World Bank. (2022). Gini index and income distribution dataset. https://data.worldbank.org
39. World Bank. (2023). Building climate resilience in Africa: Development in a warming world. World Bank Group.
40. Yaro, J. A., & Hesselberg, J. (2016). Adaptation to climate change and variability in rural West Africa. Springer.